

32. (Amended) A method to produce a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises culturing the cells of claim 31 under conditions wherein said expression system produces said protein.

C2  
cont 33. (Amended) A method to prepare cells which produce a functional T-type calcium ion channel  $\alpha_1$  subunit protein which method comprises introducing into said cells the DNA molecule of claim 28.

---

**Please add the following claim:**

---

34. A method to obtain an isolated DNA molecule which encodes a functional  $\alpha_1$  subunit of a T-type, low voltage activated calcium ion channel or the complement of said nucleotide sequence which method comprises

- C3
- (a) providing a cDNA library prepared from brain cells;
  - (b) probing said library with the nucleotide sequence set forth in SEQ. ID. NO: 18 or SEQ. ID. NO: 20 or their complements; or
  - (c) amplifying said library using PCR primers designed from said SEQ. ID. NO: 18 or SEQ. ID. NO: 20 and their complements; and
  - (d) retrieving DNA molecules which hybridize under medium stringency to the probe of (b) or which are amplified by the PCR amplification of (c); and
  - (e) optionally ligating overlapping DNA molecules obtained in (d);
- whereby a DNA molecule encoding a functional  $\alpha_1$  subunit of a T-type, low voltage activated calcium ion channel or the complement of said DNA molecule is obtained.
-